

```
=> fil reg
FILE 'REGISTRY' ENTERED AT 07:50:28 ON 12 JAN 2010
USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.
PLEASE SEE "HELP USAGETERMS" FOR DETAILS.
COPYRIGHT (C) 2010 American Chemical Society (ACS)
```

Property values tagged with IC are from the ZIC/VINITI data file provided by InfoChem.

```
STRUCTURE FILE UPDATES:  11 JAN 2010  HIGHEST RN 1201890-95-0
DICTIONARY FILE UPDATES: 11 JAN 2010  HIGHEST RN 1201890-95-0
```

New CAS Information Use Policies, enter HELP USAGETERMS for details.

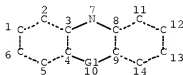
TSCA INFORMATION NOW CURRENT THROUGH June 26, 2009.

Please note that search-term pricing does apply when conducting SmartSELECT searches.

REGISTRY includes numerically searchable data for experimental and predicted properties as well as tags indicating availability of experimental property data in the original document. For information on property searching in REGISTRY, refer to:

<http://www.cas.org/support/stngen/stndoc/properties.html>

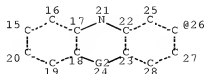
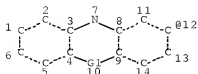
```
=> d sta que l28
L16          STR
```



```
REP G1=(0-6) A
NODE ATTRIBUTES:
DEFAULT MLEVEL IS ATOM
DEFAULT ECLEVEL IS UNLIMITED
```

```
GRAPH ATTRIBUTES:
RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS 14
```

```
STEREO ATTRIBUTES: NONE
L17          SCR 1842
L19          94669 SEA FILE=REGISTRY SSS FUL L16 AND L17
L20          STR
```



G3 29

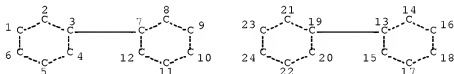
```
VAR G1=SI/N/O/S
```

REP G2=(0-3) C
 VAR G3=12/26
 NODE ATTRIBUTES:
 DEFAULT MLEVEL IS ATOM
 DEFAULT ECLEVEL IS UNLIMITED

GRAPH ATTRIBUTES:
 RING(S) ARE ISOLATED OR EMBEDDED
 NUMBER OF NODES IS 29

STEREO ATTRIBUTES: NONE

L22 88759 SEA FILE=REGISTRY SUB=L19 SSS FUL L20
 L23 STR

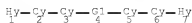


NODE ATTRIBUTES:
 DEFAULT MLEVEL IS ATOM
 DEFAULT ECLEVEL IS UNLIMITED

GRAPH ATTRIBUTES:
 RING(S) ARE ISOLATED OR EMBEDDED
 NUMBER OF NODES IS 24

STEREO ATTRIBUTES: NONE

L25 3106 SEA FILE=REGISTRY SUB=L22 SSS FUL L23
 L26 STR



REP G1=(1-2) CY
 NODE ATTRIBUTES:
 DEFAULT MLEVEL IS ATOM
 GGCAT IS PCY AT 1
 GGCAT IS PCY AT 7
 DEFAULT ECLEVEL IS UNLIMITED
 ECOUNT IS M12 C M1 N AT 1
 ECOUNT IS M12 C M1 N AT 7

GRAPH ATTRIBUTES:
 RING(S) ARE ISOLATED OR EMBEDDED
 NUMBER OF NODES IS 7

STEREO ATTRIBUTES: NONE

L28 147 SEA FILE=REGISTRY SUB=L25 SSS FUL L26

100.0% PROCESSED 3106 ITERATIONS
 SEARCH TIME: 00.00.01

147 ANSWERS

=> fil hcaplus

FILE 'HCAPLUS' ENTERED AT 07:50:42 ON 12 JAN 2010
 USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.
 PLEASE SEE "HELP USAGETERMS" FOR DETAILS.
 COPYRIGHT (C) 2010 AMERICAN CHEMICAL SOCIETY (ACS)

Copyright of the articles to which records in this database refer is held by the publishers listed in the PUBLISHER (PB) field (available for records published or updated in Chemical Abstracts after December 26, 1996), unless otherwise indicated in the original publications. The CA Lexicon is the copyrighted intellectual property of the American Chemical Society and is provided to assist you in searching databases on STN. Any dissemination, distribution, copying, or storing of this information, without the prior written consent of CAS, is strictly prohibited.

FILE COVERS 1907 - 12 Jan 2010 VOL 152 ISS 3
 FILE LAST UPDATED: 11 Jan 2010 (20100111/ED)
 REVISED CLASS FIELDS (/NCL) LAST RELOADED: Oct 2009
 USPTO MANUAL OF CLASSIFICATIONS THESAURUS ISSUE DATE: Oct 2009

HCAPLUS now includes complete International Patent Classification (IPC) reclassification data for the third quarter of 2009.

CAS Information Use Policies apply and are available at:

<http://www.cas.org/legal/infopolicy.html>

This file contains CAS Registry Numbers for easy and accurate substance identification.

=> d l46 bib abs hitstr tot

L46 ANSWER 1 OF 17 HCAPLUS COPYRIGHT 2010 ACS on STN

AN 2009:797017 HCAPLUS Full-text

DN 151:112077

TI Manufacture of organic electroluminescent devices with improved internal quantum yield by wet process, and organic electroluminescent displays

IN Nagayama, Daigo; Funayama, Katsuya

PA Mitsubishi Chemical Corp., Japan

SO Jpn. Kokai Tokkyo Koho, 40pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

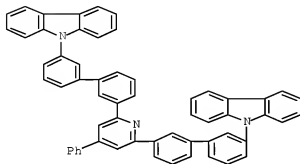
| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|----|----------------|------|----------|-----------------|--------------|
| FI | JP 2009146691 | A | 20090702 | JP 2007-321899 | 20071213 <-- |
| FR | JP 2007-321899 | | 20071213 | <-- | |

AB The title organic electroluminescent devices are manufactured by formation of organic layers between cathodes and anodes by wet process, heating the organic layers at temperature T1° for t min, and formation of emitter layers using solvents with b.p. T2° on the organic layers by wet process, satisfying 80 ≤ (T1 + t)/T2. The organic electroluminescent devices show improved emission efficiency.

IT 890148-66-6

RL: PEP (Physical, engineering or chemical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
 (emitter layer; manufacture of organic electroluminescent devices with improved internal quantum yield by wet process)

RN 890148-66-0 HCAPLUS
 CN 9H-Carbazole, 9,9'-[(4-phenyl-2,6-pyridinediyl)bis([1,1'-biphenyl]-3',3'-diyl)]bis- (CA INDEX NAME)



L46 ANSWER 2 OF 17 HCAPLUS COPYRIGHT 2010 ACS on STN

AN 2009:86282 HCAPLUS Full-text

DN 150:155888

TI Long-lifetime organic electroluminescent device

IN Sugiyama, Toshi; Funayama, Katsuya; Yabe, Masayoshi

PA Mitsubishi Chemical Corp., Japan

SO Jpn. Kokai Tokkyo Koho, 42pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------|----------------|------|----------|-----------------|--------------|
| P1 | JP 2009016665 | A | 20090122 | JP 2007-178587 | 20070706 <-- |
| PPAI | JP 2007-178587 | | 20070706 | <-- | |

AB In the device (e.g., display, light source) having a wet-formed emitter layer (e.g., of low-mol.-weight compound) between an anode and a cathode and a (wet-formed) organic layer (e.g., hole-injecting layer containing polymer and electron acceptor) next to the emitter layer, primary differential curve of capacitance with respect to voltage has a peak lower than luminescence-starting voltage of the emitter layer.

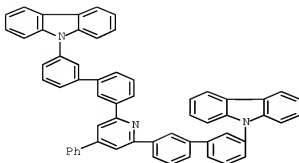
IT 890148-66-0

RL: TEM (Technical or engineered material use); USES (Uses)

(emitter layer; long-lifetime organic electroluminescent device)

RN 890148-66-0 HCAPLUS

CN 9H-Carbazole, 9,9'-[(4-phenyl-2,6-pyridinediyl)bis([1,1'-biphenyl]-3',3'-diyl)]bis- (CA INDEX NAME)



L46 ANSWER 3 OF 17 HCAPLUS COPYRIGHT 2010 ACS on STN

AN 2008:1279313 HCAPLUS Full-text

DN 149:481972

TI Organic electroluminescent device

IN Okabe, Kazutake; Nakai, Toshimitsu

PA Mitsubishi Chemical Corp., Japan

SO Jpn. Kokai Tokkyo Koho, 30pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|----|---------------|------|----------|-----------------|--------------|
| FI | JP 2008258320 | A | 20081023 | JP 2007-97545 | 20070403 <-- |
| FR | JP 2007-97545 | | 20070403 | <-- | |

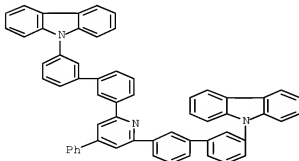
AB The invention relates to an organic electroluminescent device comprising organic layers formed between an anode and a cathode, wherein one of the organic layers is fabricated by a wet coating method and is characterized by not containing the organic compound having the mol. weight ≥ 5000 , and containing organic solvent 0.01-20 mol %.

IT 990148-66-0

RL: TEM (Technical or engineered material use); USES (Uses)
(organic electroluminescent device)

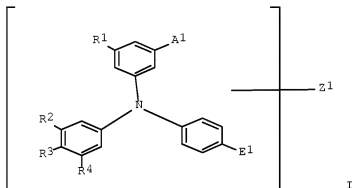
RN 890148-66-0 HCAPLUS

CN 9H-Carbazole, 9,9'-[(4-phenyl-2,6-pyridinediyl)bis([1,1'-biphenyl]-3',3-diyl)]bis- (CA INDEX NAME)



L46 ANSWER 4 OF 17 HCAPLUS COPYRIGHT 2010 ACS on STN
 AN 2008:112/551 HCAPLUS Full-text
 DN 149:389592
 TI Hole transport materials and polymers for organic electroluminescent devices
 IN Yabe, Masayoshi; Iida, Koichiro; Ogata, Tomoyuki; Okabe, Kazutake; Goromaru, Hideki; Takeuchi, Masako; Endo, Kyoto
 PA Mitsubishi Chemical Corp., Japan
 SO Jpn. Kokai Tokkyo Koho, 110pp.
 CODEN: JKXXAF
 DT Patent
 LA Japanese
 FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------|-------------------|------|----------|-----------------|--------------|
| PI | JP 2008218983 | A | 20080918 | JP 2008-7068 | 20080116 <-- |
| PRAI | JP 2007-15213 | A | 20070125 | <-- | |
| OS | MARPAT 149:389592 | | | | |
| GI | | | | | |

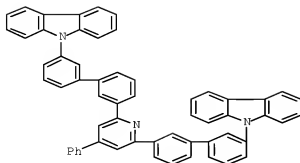


AB The materials are expressed as formula (I), where R1 .apprx. R4 = H, direct bond or monovalent group to connecting group Z1; n = 1 .apprx. 4; A1 = H or specific crosslinking group, and E1 = -O-R0 or -Ar2. Polymers formed by the polymerization of the materials are used as light-emitting layers in organic EL devices.

IT 990148-66-0
 RL: TEM (Technical or engineered material use); USES (Uses)
 (light emitting layer; hole transport materials and polymerization to form polymers for organic electroluminescent devices)

RN 890148-66-0 HCAPLUS

CN 9H-Carbazole, 9,9'-[(4-phenyl-2,6-pyridinediyl)bis-([1,1'-biphenyl]-3',3'-diyl)]bis- (CA INDEX NAME)



L46 ANSWER 5 OF 17 HCAPLUS COPYRIGHT 2010 ACS on STN

AN 2008:1127042 HCAPLUS Full-text

DN 149:366610

TI Spin coating manufacturing method of organic electroluminescent device having extended service life suitable for use in optical display

IN Funayama, Katsuya; Nabeta, Maki

PA Mitsubishi Chemical Corp., Japan

SO Jpn. Kokai Tokkyo Koho, 42pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

PATE

PATENT NO.

KIND

DATE _____

APPLICATION NO.

DATE _____

— — —

THE UNIVERSITY OF CHICAGO

FI JP 2008218363

A

20080918

JP 2007-58108

20070308 <--

PRAI JP 2007-58108

20070308

—

AB The invention relates to an organic electroluminescent device manufacturing method in which an organic electroluminescent layer is prepared by a spin coating process under 0.01-100 ppm relative humidity and 0.01-10 ppm oxygen volume d. and the organic layer is dried by a hot plate placed at ≤ 5 cm away from the organic layers.

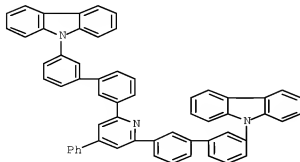
IT 890148-66-0

RL: TEM (Technical or engineered material use); USES (Uses)

(spin coating manufacturing method of organic electroluminescent device having extended service life suitable for use in optical display)

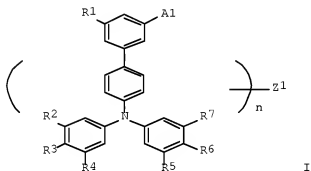
RN 890148-66-0 HCAPLUS

CN 9H-Carbazole, 9,9'-[(4-phenyl-2,6-pyridinediyl)bis([1,1'-biphenyl]-3',3-diyl)]bis- (CA INDEX NAME)

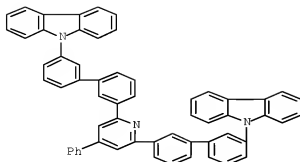


L46 ANSWER 6 OF 17 HCAPLUS COPYRIGHT 2010 ACS on STN
 AN 2008:1038725 HCAPLUS Full-text
 DN 149:321420
 TI Hole transport materials, polymers formed by polymerization of the hole transport materials, and compositions for organic electroluminescent devices
 IN Yabe, Masayoshi; Iida, Koichiro; Ogata, Tomoyuki; Okabe, Kazutake; Goromaru, Hideki; Takeuchi, Masako; Endo, Kyoko
 PA Mitsubishi Chemical Corp., Japan
 SO Jpn. Kokai Tokkyo Koho, 84pp.
 CODEN: JKXXAF
 DT Patent
 LA Japanese
 FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------|-------------------|------|----------|-----------------|--------------|
| PI | JP 2008198989 | A | 20080828 | JP 2007-328892 | 20071220 <-- |
| PRRI | JP 2007-5935 | A | 20070115 | <-- | |
| OS | MARPAT 149:321420 | | | | |
| GI | | | | | |



AB The hole transport materials have the formula (I), where R1 .apprx. R7 = H, direct bond to Z1 or monovalent group; and ≥ 1 A1 = crosslinking group.
 IT 890148-66-0
 RL: TEM (Technical or engineered material use); USES (Uses)
 (hole transport materials, polymers formed by polymerization of the hole transport materials, and compns. for organic electroluminescent devices)
 RN 890148-66-0 HCAPLUS
 CN 9H-Carbazole, 9,9'-[(4-phenyl-2,6-pyridinediyl)bis-([1,1'-biphenyl]-3',3'-diyl)]bis- (CA INDEX NAME)



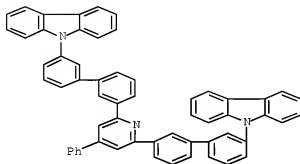
L46 ANSWER 7 OF 17 HCAPLUS COPYRIGHT 2010 ACS on STN
 AN 2008:1005305 HCAPLUS Full-text
 DN 149:297651
 TI Organic field emitting element and method for manufacturing organic device
 IN Ogata, Tomoyuki; Okabe, Kazuki; Iida, Koichiro; Yabe, Masayoshi
 PA Mitsubishi Chemical Corporation, Japan
 SO PCT Int. Appl., 104 pp.
 CODEN: PIXXD2
 DT Patent
 LA Japanese
 FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------|--|--|----------|------------------|--------------|
| FI | WO 2008099926 | A1 | 20080821 | WO 2008-JP52546 | 20080215 <-- |
| | W: | AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, SV, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW | | | |
| | RW: | AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MT, NL, NO, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG, BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM | | | |
| | JP 2008227483 | A | 20080925 | JP 2008-34930 | 20080215 <-- |
| | EP 2112702 | A1 | 20091028 | EP 2008-711376 | 20080215 <-- |
| | R: | AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LI, LT, LU, LV, MC, MT, NL, NO, PL, PT, RO, SE, SI, SK, TR | | | |
| | KR 2009119827 | A | 20091120 | KR 2009-712390 | 20080215 <-- |
| | CN 101578719 | A | 20091111 | CN 2008-80001524 | 20090626 <-- |
| FRAT | JP 2007-34466 | A | 20070215 | <-- | |
| | WO 2008-JP52546 | W | 20080215 | | |
| AB | Increase of a driving voltage of an organic field emitting element when a constant current is carried and deterioration of luminance when electricity is carried are suppressed, and a driven service life is lengthened. The organic field emitting element is composed of a substrate, an anode and a cathode arranged on the substrate and a plurality of organic layers arranged between the anode and the cathode. The organic layers include at least a 1st layer formed by polymerizing a polymerizable compound, and a 2nd layer, which is arranged adjacent to the 1st layer and contains a polymerization initiator. | | | | |
| IT | 890148-66-0 | | | | |

RL: TEM (Technical or engineered material use); USES (Uses)
 (formation of organic field emitting element and method for manufacturing organic device)

RN 890148-66-0 HCAPLUS

CN 9H-Carbazole, 9,9'-[4-phenyl-2,6-pyridinediyl]bis([1,1'-biphenyl]-3',3'-diyl))bis- (CA INDEX NAME)



RE.CNT 15 THERE ARE 15 CITED REFERENCES AVAILABLE FOR THIS RECORD
 ALL CITATIONS AVAILABLE IN THE RE FORMAT

L46 ANSWER 8 OF 17 HCAPLUS COPYRIGHT 2010 ACS on STN

AN 2008:584993 HCAPLUS Full-text

DN 148:549289

TI Organic electroluminescent devices, their films, compositions, and charge-transporting low molecule coating materials therefor

IN Takeuchi, Masako; Yabe, Masayoshi; Okabe, Kazutake; Goromaru, Hideki; Endo, Kyoko; Iida, Koichiro

PA Mitsubishi Chemical Corp., Japan

SO Jpn. Kokai Tokkyo Koho, 61pp.

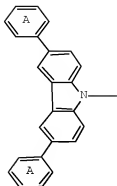
CODEN: JKXXAF

DT Patent

LA Japanese

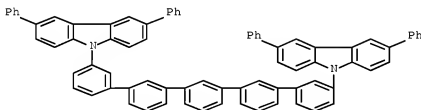
FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------|-------------------|------|----------|-----------------|--------------|
| PI | JP 2008112984 | A | 20080515 | JP 2007-255807 | 20070928 <-- |
| PR&I | JP 2006-273482 | A | 20061004 | <-- | |
| OS | MARPAT 148:549289 | | | | |
| GI | | | | | |



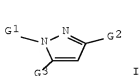
I

- AB The title materials, forming noncrystg. charge-transporting layers and giving organic LED with low drive voltage and heat resistance, are lower mols. having partial structure I (ring A may be substituted) and satisfying mol. weight ≤ 5000 . Also claimed are organic compds. $R1R2NBB'n-m-C6H2(m'-NR1R2)D'mDNr1R2$ (ring B-D, B', D' = benzene ring; R1, R2 = substituent, essentially including I; n, m = 0-3 integer). Compns. of the materials and solvents, and their films formed by wet process, are also claimed.
- IT 928050-09-3P
 RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
 (charge-transport substances; organic electroluminescent devices containing low-mol. charge-transport layers with good heat resistance and showing low drive voltage)
- RN 928050-09-3 HCAPLUS
- CN 9H-Carbazole, 9,9',9'',9'''-[1,1':3',1'':3'',1''':3''',1''''-quinquephenyl]-3,3''''-diylbis[3,6-diphenyl- (CA INDEX NAME)]

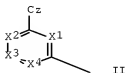


- L46 ANSWER 9 OF 17 HCAPLUS COPYRIGHT 2010 ACS on STN
- AN 2008:153835 HCAPLUS [Full-text](#)
- DN 148:201885
- TI Organic compounds with high excited triplet state, heat-resistant charge-transfer materials, their compositions, organic electroluminescent devices
- IN Yabe, Masayoshi; Goromaru, Hideki; Okabe, Kazutake
- PA Mitsubishi Chemical Corp., Japan
- SO Jpn. Kokai Tokkyo Koho, '76pp.
 CODEN: JKXXAF
- DT Patent
- LA Japanese
- FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------|--|------|----------|-----------------|--------------|
| FI | JP 2008024698 | A | 20080207 | JP 2007-163148 | 20070620 <-- |
| EPAI | JP 2006-172010 | A | 20060621 | <-- | |
| OS | CASREACT 148:201885; MARPAT 148:201885 | | | | |
| GI | | | | | |



I



II

AB The organic compds. for charge-transfer materials, solar cell battery materials, electrolytes, coatings, organic semiconductor materials, etc., comprise compds. represented by the general formula I (G1-G3 = aromatic hydrocarbyl, direct bond or linkage connected to the moiety represented by the general formula II; ring A = 6-membered aromatic ring such as benzene ring or pyridine ring; X1-X4 = N, carbon which may be substituted; Cz = N-carbazolyl which may be substituted; the number of N forming direct bonds with the ring A is 1 or 2 including the N-carboxyl group). The charge-transfer materials compns. contain the organic compds. I and solvents, and optionally, phosphorescent colorants. The organic electroluminescent device contains a substrate having thereon an anode, a cathode, and in between, an organic electroluminescent layer involving a layer containing the organic compds. I as host materials and phosphorescent colorants as dopants.

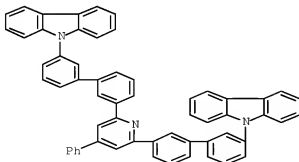
IT 850148-66-0

RL: TEM (Technical or engineered material use); USES (Uses)

(light-emitting layer; organic compds. with high excited triplet state, prepared from pyrazoles and carbazoles for heat-resistant charge-transfer materials for organic EL devices)

RN 890148-66-0 HCAPLUS

CN 9H-Carbazole, 9,9'-[4-phenyl-2,6-pyridinediyl]bis-([1,1'-biphenyl]-3',3-diyl)bis- (CA INDEX NAME)



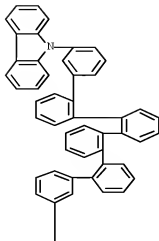
L46 ANSWER 10 OF 17 HCAPLUS COPYRIGHT 2010 ACS on STN

AN 2007:943968 HCAPLUS [Full-text](#)

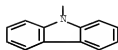
DN 147:311025

TI Organic electroluminescent devices using compounds with chains of six

PAGE 1-A



PAGE 2-A



L46 ANSWER 11 OF 17 HCAPLUS COPYRIGHT 2010 ACS on STN

AN 2007:284828 HCAPLUS [Full-text](#)

DN 146:305518

TI Charge transporter materials with excellent solubility, their compositions, and organic electroluminescent devices

IN Iida, Koichiro; Yabe, Masayoshi; Sato, Hideki; Takeuchi, Masako; Fugono, Masayo; Okabe, Kazutake; Goromaru, Hideki; Okabe, Misako

PA Mitsubishi Chemical Corp., Japan

SO Jpn. Kokai Tokkyo Koho, 71pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------|-------------------|------|----------|-----------------|--------------|
| FI | JP 2007067383 | A | 20070315 | JP 2006-208258 | 20060731 <-- |
| FRAT | JP 2005-226905 | A | 20050804 | <-- | |
| OS | MARPAT 146:305518 | | | | |

AB The materials are depicted as Ar1Ar2NQ1ABCDEQ2NAr3AR4 [A-E] = divalent (un)substituted benzene or pyridine ring; ≥ 2 of A-E \neq pyridine ring; Ar1-4 = (un)substituted aromatic hydrocarbyl or heterocyclic group; Q1,2 = direct bond, divalent linking group derived from (un)substituted aromatic hydrocarbon or aromatic heterocyclic ring, thus giving EL devices with high emission efficiency and driving stability.

IT 854957-43-5P 890148-66-0P 928050-04-8P

928050-06-0P 928050-09-3P 928050-10-6P

RL: IMF (Industrial manufacture); TEM (Technical or engineered material)

use); PREP (Preparation); USES (Uses)

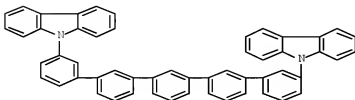
(charge transporter; charge transporters with good solubility for organic

EL

devices)

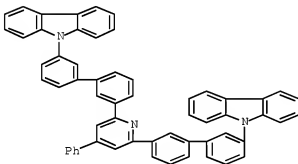
RN 854952-43-5 HCAPLUS

CN 9H-Carbazole, 9,9'-[1,1':3',1'':3'',1''':3''',1''''-quinquephenyl]-3,3'''-diylbis- (CA INDEX NAME)



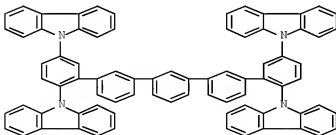
RN 890148-66-0 HCAPLUS

CN 9H-Carbazole, 9,9'-[4-phenyl-2,6-pyridinediyl]bis([1,1'-biphenyl]-3',3'-diyl)bis- (CA INDEX NAME)



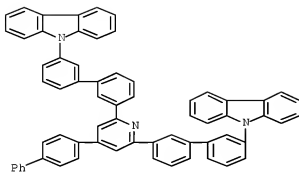
RN 928050-04-8 HCAPLUS

CN 9H-Carbazole, 9,9',9'',9'''-[1,1':3',1'':3'',1''':3''',1''''-quinquephenyl]-2,2''',5,5''''-tetrayltetrakis- (CA INDEX NAME)



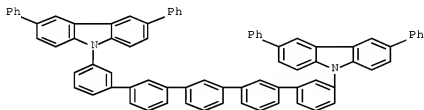
RN 928050-06-0 HCAPLUS

CN 9H-Carbazole, 9,9'-[[4-[1,1'-biphenyl]-4-yl-2,6-pyridinediyl]bis([1,1'-biphenyl]-3',3'-diyl)]bis- (CA INDEX NAME)



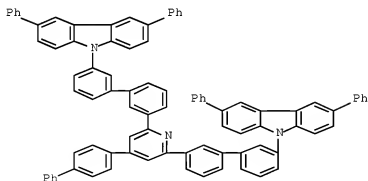
RN 928050-09-3 HCAPLUS

CN 9H-Carbazole, 9,9',9'',9'''-[1,1':3',1'':3'',1''':3''',1''':3''']-quinquephenyl]-3,3'''-diylbis[3,6-diphenyl-] (CA INDEX NAME)



RN 928050-10-6 HCAPLUS

CN 9H-Carbazole, 9,9'-[[4-[1,1'-biphenyl]-4-yl-2,6-pyridinediyl]bis([1,1'-biphenyl]-3',3'-diyl)]bis[3,6-diphenyl-] (CA INDEX NAME)



OSC.G 1 THERE ARE 1 CAPLUS RECORDS THAT CITE THIS RECORD (1 CITINGS)

L46 ANSWER 12 OF 17 HCAPLUS COPYRIGHT 2010 ACS on STN

AN 2006:1005218 HCAPLUS [Full-text](#)

DN 145:386007

TI Composite material, light emitting element and light emitting device

IN Iwaki, Yuji; Seo, Satoshi; Kumaki, Daisuke

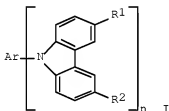
PA Semiconductor Energy Laboratory Co., Ltd., Japan
 SO PCT Int. Appl., 86pp.
 CODEN: PIXXD2
 DT Patent
 LA English
 FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|----|------------------|--|----------|------------------|--------------|
| FI | WO 2006101016 | A1 | 20060928 | WO 2006-JP305317 | 20060313 <-- |
| | W: | AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, LY, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW | | | |
| | RW: | AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG, BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM | | | |
| | EP 1866984 | A1 | 20071219 | EP 2006-729307 | 20060313 <-- |
| | R: | DE, FI, FR, GB, NL | | | |
| | JP 2006303470 | A | 20061102 | JP 2006-78171 | 20060322 <-- |
| | US 20080191611 | A1 | 20080814 | US 2006-577471 | 20060427 <-- |
| FR | JP 2005-85056 | A | 20050323 | <-- | |
| | WO 2006-JP305317 | W | 20060313 | <-- | |

ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT

OS MARPAT 145:386007

GI



AB Composite materials are described which comprise an inorg. material and an organic compound described by the general formula I (Ar = C6-42 aromatic hydrocarbon group; n = 1-3; and R1 and R2 = H, C1-4 alkyl; or C6-12 aryl). Light-emitting devices with layers including the composite materials (e.g., carrier-transporting/injecting layers) are also described, as are electronic devices incorporating the light-emitting devices (e.g., for display purposes).

IT 910647-27-7D, derivs.

RL: DEV (Device component use); USES (Uses)

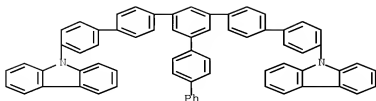
(composite materials formed from inorg. materials and aromatic compds. with carbazoyl substituents and light-emitting devices using them)

RN 910647-27-7 HCAPLUS

CN 9H-Carbazole, 9,9'-(5''-[1,1'-biphenyl]-4-

yl[1,1':4',1'':3'',1''':4''',1''''-quinquephenyl]-4,4''''-diyl)bis- (9CI)

(CA INDEX NAME)



OSC.G 1 THERE ARE 1 CAPLUS RECORDS THAT CITE THIS RECORD (1 CITINGS)
 RE.CNT 15 THERE ARE 15 CITED REFERENCES AVAILABLE FOR THIS RECORD
 ALL CITATIONS AVAILABLE IN THE RE FORMAT

L46 ANSWER 13 OF 17 HCAPLUS COPYRIGHT 2010 ACS on STN

AN 2006:945494 HCAPLUS Full-text

DN 145:324613

TI Organic electric field light emitting element and its fabrication

IN Yabe, Masayoshi; Ogata, Tomoyuki; Sato, Hideki; Iida, Koichiro; Tanaka, Asato; Tanamura, Mitsuru; Kawamura, Yuichiro; Ishikawa, Hironori; Okabe, Kazuki

PA Mitsubishi Chemical Corporation, Japan

SO PCT Int. Appl., 129pp.

CODEN: PIXXD2

DT Patent

LA Japanese

FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------|---|------|----------|------------------|--------------|
| FI | WO 2006095539 | A1 | 20060914 | WO 2006-JP302502 | 20060214 <-- |
| | W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, KE, KG, KM, KN, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, LY, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW | | | | |
| | RM: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG, BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM | | | | |
| | JP 2006257409 | A | 20060928 | JP 2006-36880 | 20060214 <-- |
| | EP 1857521 | A1 | 20071121 | EP 2006-713643 | 20060214 <-- |
| | R: DE | | | | |
| | US 20090066223 | A1 | 20090312 | US 2007-816672 | 20070820 <-- |
| | KR 2007110498 | A | 20071119 | KR 2007-719151 | 20070821 <-- |
| | CN 101128560 | A | 20080220 | CN 2006-80005601 | 20070821 <-- |
| | JP 2009102656 | A | 20090514 | JP 2009-27021 | 20090209 <-- |
| FFAI | JP 2005-44250 | A | 20050221 | <-- | |
| | JP 2006-36880 | A3 | 20060214 | <-- | |
| | WO 2006-JP302502 | W | 20060214 | <-- | |

ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT

AB An organic elec. field light-emitting element-use composition which is a composition for forming the organic light-emitting layer of an organic elec. field light-emitting element by a wet film making method, and which contains a

light emitting material, a charge transporting material and a solvent, wherein the light emitting material and the charge transporting material are resp. non-polymerized organic compds., and the relation between the first oxidation potential ED + of the light emitting material, the first reduction potential ED - of the light emitting material, the first oxidation potential ET + of the charge transporting material, and the first reduction potential ET - of the charge transporting material satisfies $ET - + 0.1 \leq ED - < ET + \leq ED + -0.1$ or $ED - +0.1 \leq ET - < ED + \leq ET + -0.1$.

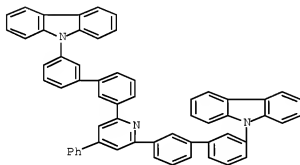
IT 890148-66-0

RL: DEV (Device component use); USES (Uses)

(organic elec. field light-emitting device and its fabrication)

RN 890148-66-0 HCAPLUS

CN 9H-Carbazole, 9,9'-[(4-phenyl-2,6-pyridinediyl)bis([1,1'-biphenyl]-3,3-diyl)]bis- (CA INDEX NAME)



OSC.G 1 THERE ARE 1 CAPLUS RECORDS THAT CITE THIS RECORD (5 CITINGS)

RE.CNT 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L46 ANSWER 14 OF 17 HCAPLUS COPYRIGHT 2010 ACS on STN

AN 2006:632732 HCAPLUS [Full-text](#)

DN 145:103546

TI Preparation of biscarbazole derivatives as charge-transporting materials, and organic electroluminescent elements

IN Yabe, Masayoshi; Sato, Hideki

PA Pioneer Corporation, Japan; Mitsubishi Chemical Corporation

SO PCT Int. Appl., 137 pp.

CODEN: PIXXD2

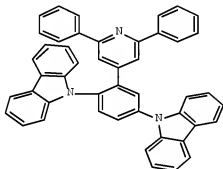
DT Patent

LA Japanese

FAN.CNT 1

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|--|------|----------|-----------------|--------------|
| WO 2006067976 | A1 | 20060629 | WO 2005-JP22635 | 20051209 <-- |
| W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GR, HU, ID, IL, IN, IS, KE, KG, KM, KN, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, LY, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG, BW, GH, | | | | |

GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY,
 KG, KZ, MD, RU, TJ, TM
 JP 2006199679 A 20060803 JP 2005-355790 20051209 <--
 EP 1829871 A1 20070905 EP 2005-814748 20051209 <--
 R: DE
 CN 101087776 A 20071212 CN 2005-80044718 20051209 <--
 KR 2007090952 A 20070906 KR 2007-714364 20070622 <--
 US 20080145659 A1 20080619 US 2007-722760 20070625 <--
 US 20080191426 A2 20090730
 PRAI JP 2004-373981 A 20041224 <--
 WO 2005-JP22635 W 20051209 <--
 ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT
 OS CASREACT 145:103546; MARPAT 145:103546
 GI



AB Organic compds. represented by the following formula [I; Cz1, Cz2 = carbazolyl; Z = a direct bond or any connecting group which enables the nitrogen atom of the carbazole ring in Cz1 to be conjugated with the nitrogen atom of the carbazole ring in Cz2; Q = a direct bond connected to G in the following formula Q1; ring B1 = a 6-membered aromatic heterocycle having n nitrogen atom(s) as a heteroatom, provided that n is an integer of 1-3; G is connected to Q, it is a direct bond or any connecting group which each is connected to Q; G is bonded to any of the carbon atoms located in the ortho and para positions to a nitrogen atom of the ring B1; when G is not connected to Q, it is an aromatic hydrocarbon group; m = an integer of 3-5] are prepared. These compds. combines excellent hole-transporting properties with excellent electron-transporting properties and has excellent long-term resistance to elec. oxidation/reduction and a high triplet excitation level. A charge-transporting material and an organic electroluminescent element which comprise or employ the organic compound I are also disclosed. Thus, aldol condensation of 2,5-difluorobenzaldehyde with acetophenone in a mixture of concentrated H2SO4 and THF at 35° for 7 h gave 1-phenyl-3-(2,5-difluorophenyl)-2-propen-1-one which underwent cyclocondensation with 1-phenacylpyridinium bromide and ammonium acetate in a mixture of AcOH and DMF under refluxing for 6 h to give 4-(2,5-difluorophenyl)-2,6-diphenylpyridine (II). Carbazole was treated with NaH in DMF at 80° for 60 min and condensed with II under refluxing for 3 h to give 4-[2,5-bis(carbazol-9-yl)phenyl]-2,6-diphenylpyridine (III). An electroluminescent device with a luminescent layer comprising III as a main

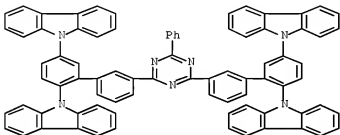
component (host material) showed excellent life property (working life of 1.00 at 2.500 cd/m2).

IT 895146-50-6P 895147-12-3P 895147-56-5P

RL: DEV (Device component use); SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses) (preparation of biscarbazole derivs. as charge-transporting materials, and organic electroluminescent elements)

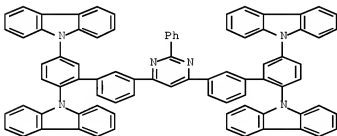
RN 895146-50-6 HCAPLUS

CN 9H-Carbazole, 9,9',9'',9'''-[(6-phenyl-1,3,5-triazine-2,4-diyl)bis([1,1'-biphenyl]-3',2,5-triyl)]tetrakis- (9CI) (CA INDEX NAME)



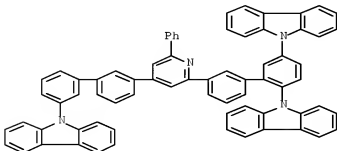
RN 895147-12-3 HCAPLUS

CN 9H-Carbazole, 9,9',9'',9'''-[(2-phenyl-4,6-pyrimidinediyl)bis([1,1'-biphenyl]-3',2,5-triyl)]tetrakis- (9CI) (CA INDEX NAME)

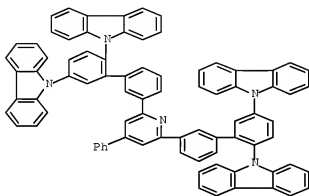


RN 895147-56-5 HCAPLUS

CN 9H-Carbazole, 9,9',9'''-[3'-[4-[3'-(9H-carbazol-9-yl)[1,1'-biphenyl]-3-yl]-6-phenyl-2-pyridinyl][1,1'-biphenyl]-2,5-diyl]bis- (9CI) (CA INDEX NAME)



IT 895146-38-QP
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT
 (Reactant or reagent)
 (preparation of biscarbazole derivs. as charge-transporting materials, and
 organic electroluminescent elements)
 RN 895146-38-0 HCAPLUS
 CN 9H-Carbazole, 9,9',9'',9'''-[(4-phenyl-2,6-pyridinediyl)bis([1,1'-
 biphenyl]-3',2,5-triyl)]tetrakis- (9CI) (CA INDEX NAME)



OSC.G 2 THERE ARE 2 CAPLUS RECORDS THAT CITE THIS RECORD (6 CITINGS)
 RE.CNT 16 THERE ARE 16 CITED REFERENCES AVAILABLE FOR THIS RECORD
 ALL CITATIONS AVAILABLE IN THE RE FORMAT

L46 ANSWER 15 OF 17 HCAPLUS COPYRIGHT 2010 ACS on STN
 AN 2006:558335 HCAPLUS Full-text
 DN 145:53073
 TI Organic compound, charge-transporting material, and organic
 electroluminescent element
 IN Yabe, Masayoshi; Sato, Hideki; Takeuchi, Masako; Fugono, Masayo; Iida,
 Koichiro
 PA Pioneer Corporation, Japan; Mitsubishi Chemical Corporation
 SO PCT Int. Appl., 143 pp.
 CODEN: PIXXD2
 DT Patent
 LA Japanese
 FAN.CNT 1

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|------|----------|-----------------|--------------|
| WO 2006062062 | A1 | 20060615 | WO 2005-JP22298 | 20051205 <-- |
| W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, KE, KG, KM, KN, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, LY, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG, BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM | | | | |

| | | | | |
|-----------------|----|----------|------------------|--------------|
| JP 2006188493 | A | 20060720 | JP 2005-350623 | 20051205 <-- |
| EP 1820801 | A1 | 20070822 | EP 2005-811601 | 20051205 <-- |
| R: DE | | | | |
| CN 101076528 | A | 20071121 | CN 2005-80042418 | 20051205 <-- |
| KR 2007085974 | A | 20070827 | KR 2007-713039 | 20070608 <-- |
| US 20090236973 | A1 | 20090924 | US 2007-721401 | 20070611 <-- |
| JP 2004-358592 | A | 20041210 | <-- | |
| WO 2005-JP22298 | W | 20051205 | <-- | |

ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT

OS MARPAT 145:53073

GI



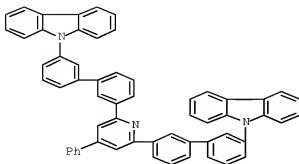
AB An organic compound and a charge-transporting material which each combines excellent hole-transporting properties with excellent electron-transporting properties and has excellent long-term resistance to elec. oxidation/reduction and a high triplet excitation level; and an organic electroluminescent element employing the organic compound. The element has a high luminescent efficiency, high operation stability, and a long life. The organic compound has per mol. two or more partial structures represented by the following formula I, where Cz is carbazolyl, Z is a direct bond or any connecting group. The nitrogen atoms present in each mol. are not conjugated with each other, except for the nitrogen atoms present in the same ring B1. Only one pyridine ring is present per mol. The two or more Q's present per mol. each represents a direct bond connected to G in the formula II, where ring B1 is a 6-membered aromatic heterocycle having n nitrogen atom(s) as a heteroatom, provided that n is an integer of 1-3. When G is connected to Q, it is a direct bond or any connecting group which each is connected to Q. When G is not connected to Q, it is an aromatic hydrocarbon group. G is bonded to any of the carbon atoms located in the ortho and para positions to a nitrogen atom of the ring B1. Symbol m is an integer of 3-5.

IT 890148-66-0

RL: DEV (Device component use); USES (Uses)
(organic compound, charge-transporting material, and organic electroluminescent element)

RN 890148-66-0 HCAPLUS

CN 9H-Carbazole, 9,9'-[(4-phenyl-2,6-pyridinediyl)bis([1,1'-biphenyl]-3',3-diyl)]bis- (CA INDEX NAME)

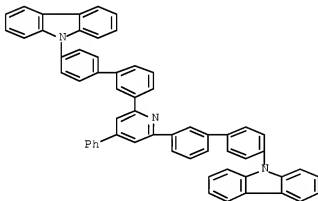


IT 890148-65-9P 890148-70-6P

RL: DEV (Device component use); PRP (Properties); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
(organic compound, charge-transporting material, and organic electroluminescent element)

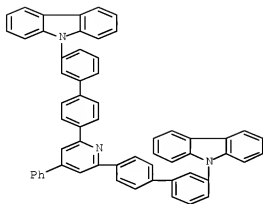
RN 890148-65-9 HCAPLUS

CN 9H-Carbazole, 9,9'-[(4-phenyl-2,6-pyridinediyl)bis([1,1'-biphenyl]-3,4'-diyl)]bis- (9CI) (CA INDEX NAME)



RN 890148-70-6 HCAPLUS

CN 9H-Carbazole, 9,9'-[(4-phenyl-2,6-pyridinediyl)bis([1,1'-biphenyl]-4',3'-diyl)]bis- (9CI) (CA INDEX NAME)



OSC.G 2 THERE ARE 2 CAPLUS RECORDS THAT CITE THIS RECORD (4 CITINGS)
 RE.CNT 12 THERE ARE 12 CITED REFERENCES AVAILABLE FOR THIS RECORD
 ALL CITATIONS AVAILABLE IN THE RE FORMAT

L46 ANSWER 16 OF 17 HCAPLUS COPYRIGHT 2010 ACS on STN

AN 2005:540732 HCAPLUS [Full-text](#)

DN 143:86370

TI Organic compounds having low symmetry for electroluminescent device

IN Iwakuma, Toshihiro; Tomita, Seiji; Ito, Mitsunori

PA Idemitsu Kosan Co., Ltd., Japan

SO PCT Int. Appl., 99 pp.

CODEN: PIXXD2

DT Patent

LA Japanese

FAN.CNT 1

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|--|------|----------|------------------|--------------|
| WO 2005057987 | A1 | 20050623 | WO 2004-JP18960 | 20041213 <-- |
| W: | | | | |
| AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW | | | | |
| RW: | | | | |
| BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG | | | | |
| EP 1696708 | A1 | 20060830 | EP 2004-807317 | 20041213 <-- |
| R: | | | | |
| AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, FI, RO, CY, TR, BG, CZ, EE, HU, PL, SK, IS | | | | |
| CN 1895004 | A | 20070110 | CN 2004-80037470 | 20041213 <-- |
| KR 2006121191 | A | 20061128 | KR 2006-711728 | 20060614 <-- |
| IN 2006CN02124 | A | 20070706 | IN 2006-CN2124 | 20060615 <-- |
| US 20070104976 | A1 | 20070510 | US 2007-582963 | 20070105 <-- |
| JP 2003-417066 | A | 20031215 | <-- | |
| WO 2004-JP18960 | W | 20041213 | <-- | |

AB Disclosed is a material for organic electroluminescent devices which is composed of a compound having a specific structure which is low in symmetry. An organic electroluminescent device comprising an organic thin film layer which is composed of one or more layers including at least a light-emitting

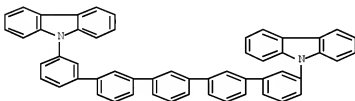
layer and sandwiched between an anode and a cathode is also disclosed wherein at least one layer of the organic thin film layer contains the above-described material for organic electroluminescent devices. The material for organic electroluminescent devices enables to obtain an organic electroluminescent device which is free from pixel defects and has a high luminous efficiency, excellent heat resistance and long life.

| | | | |
|----|--------------|--------------|--------------|
| IT | 854952-43-5F | 854952-46-8F | 854952-49-1F |
| | 854952-50-4F | 854952-54-8F | 854952-55-9F |
| | 854952-56-0F | 854952-57-1F | 854952-63-9F |

RL: DEV (Device component use); PRP (Properties); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
(organic compds. having low symmetry for electroluminescent device)

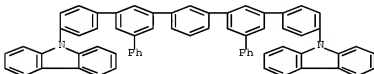
RN 854952-43-5 HCAPLUS

CN 9H-Carbazole, 9,9'-[1,1':3',1'':3'',1''':3''',1''''-quinquephenyl]-3,3'''-
diylbis- (CA INDEX NAME)



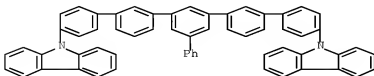
RN 854952-46-8 HCAPLUS

CN 9H-Carbazole, 9,9'-(5',5'''-diphenyl[1,1':3',1'''':3'',1''':3''',1''''-quinquephenyl]-4,4''''-diyl)bis- (9CI) (CA INDEX NAME)



RN 854952-49-1 HCAPLUS

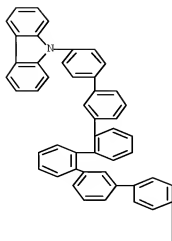
CN 9H-Carbazole, 9,9'-(5''-phenyl[1,1':3'',1''' :3''',1'''' :3''''',1''''' -
quinquephenyl]-4,4'''''-diyl)bis- (9CI) (CA INDEX NAME)



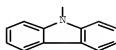
RN 854952-50-4 HCAPLUS

CN 9H-Carbazole, 9,9'-[1,1':3,1'',2'',1''',2''',1''''':3''''',1''''''-
sexiphenyl]-4,4'''''-diylbis- (9CI) (CA INDEX NAME)

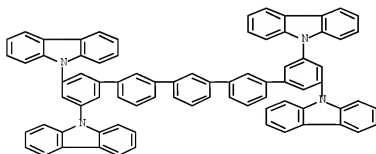
PAGE 1-A



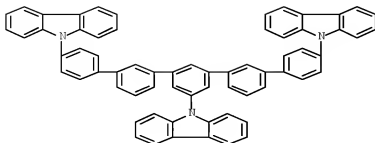
PAGE 2-A



RN 854952-54-8 HCAPLUS
 CN 9H-Carbazole, 9,9',9'',9'''-[1,1':3',1'':3'',1''':3''',1''''-quinquephenyl]-3,3''',5,5''''-tetrayltetrakis- (9CI) (CA INDEX NAME)

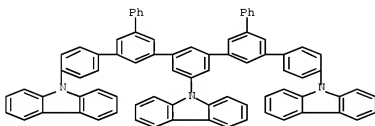


RN 854952-55-9 HCAPLUS
 CN 9H-Carbazole, 9,9',9'',9'''-[1,1':3',1'':3'',1''':3''',1''''-quinquephenyl]-4,4''',5''-triyltris- (9CI) (CA INDEX NAME)



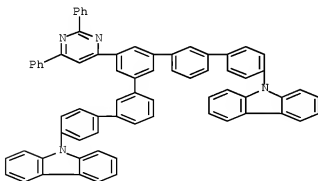
RN 854952-56-0 HCAPLUS

CN 9H-Carbazole, 9,9'-(5',5''-diphenyl[1,1':3',1'':3'',1''':3''',1''''-quinquephenyl]-4,4''''',5''-triyl)tris- (9CI) (CA INDEX NAME)



RN 854952-57-1 HCAPLUS

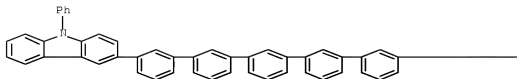
CN 9H-Carbazole, 9,9'-(5',5''-(2,6-diphenyl-4-pyrimidinyl)[1,1':3',1'':3'',1''':3''',1''''-quinquephenyl]-4,4''''',5''-diyl)bis- (9CI) (CA INDEX NAME)



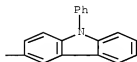
RN 854952-63-9 HCAPLUS

CN 9H-Carbazole, 3,3'-(1,1':3',1'':3'',1''':3''',1''''-quinquephenyl)-3,3''''-diylbis[9-phenyl- (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 1-B



OSC.G 2 THERE ARE 2 CAPLUS RECORDS THAT CITE THIS RECORD (3 CITINGS)
 RE.CNT 8 THERE ARE 8 CITED REFERENCES AVAILABLE FOR THIS RECORD
 ALL CITATIONS AVAILABLE IN THE RE FORMAT

L46 ANSWER 17 OF 17 HCAPLUS COPYRIGHT 2010 ACS on STN

AN 2000:631876 HCAPLUS [Full-text](#)

DN 133:230365

TI Aromatic amino compounds, their preparation, and uses in
 electroluminescent element or electrophotographic photoreceptor

IN Fujino, Yasumitsu; Ueda, Hideaki; Furukawa, Keiichi

PA Minolta Camera Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 35 pp.

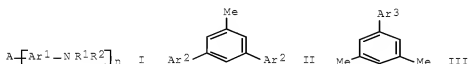
CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|-------|-------------------|------|----------|-----------------|--------------|
| P1 | JP 2000247932 | A | 20000912 | JP 1999-52513 | 19990301 <-- |
| | JP 4232259 | B2 | 20090304 | | |
| EP/JP | JP 1999-52513 | | 19990301 | <-- | |
| OS | MARPAT 133:230365 | | | | |
| GI | | | | | |



AB The amino compds. A(Ar1NR1R2)n [I; A = Q1, Q2; Ar2, Ar3 = (substituted) aryl;
 Ar1 = (substituted) arylene; R1, R2 = alkyl, aralkyl, (substituted) aryl,
 (substituted) aromatic heterocyclyl; n = 1, 2] are prepared by reaction of
 A(Ar1X)n (A, Ar1, n = same as I; X = halo) with HNR1R2 (R1, R2 = same as I).
 I show high charge-transporting ability, luminescence, and durability.

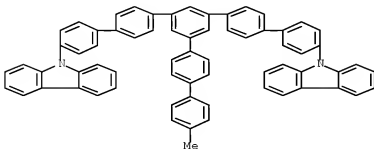
IT 292146-82-4

RL: DEV (Device component use); PRP (Properties); TEM (Technical or
 engineered material use); USES (Uses)

(preparation of aromatic amino compds. for electroluminescent element or electrophotog. photoreceptor)

RN 292148-82-4 HCAPLUS

CN 9H-Carbazole, 9,9'-(5'-(4'-methyl[1,1'-biphenyl]-4-yl)[1,1':4',1'':3'',1''':4''',1''''-quinquephenyl]-4,4''''-diyl)bis- (9CI)
(CA INDEX NAME)



OSC.G 3 THERE ARE 3 CAPLUS RECORDS THAT CITE THIS RECORD (3 CITINGS)

=> => d his

(FILE 'HOME' ENTERED AT 07:04:13 ON 12 JAN 2010)
SET COST OFF

FILE 'HCAPLUS' ENTERED AT 07:04:28 ON 12 JAN 2010

```
L1      1 S US20070104976/PN OR (US2007-582963 OR WO2004-JP18960 OR JP200
      E IWAKUMA/AU
L2      125 S E21,E29,E35
      E TOMITA/AU
L3      1 S E3
      E TOMITA S/AU
L4      163 S E3,E34
      E ITO/AU
L5      10 S E3
      E ITO M/AU
L6      1120 S E3-E6
      E ITO MIT/AU
L7      95 S E6,E27,E29
      E TOSHIHIRO/AU
L8      1 S E3
      E SEIJI/AU
L9      7 S E3
      E MITSUNORI/AU
      E TOSHI HIRO/AU
      E SEI JI/AU
L10     214 S (IWAKUMA NAME? OR TOSHIHIRO NAME? OR TOMITA NAME? OR SEIJI NA
      SEL RN L1
```

FILE 'REGISTRY' ENTERED AT 07:08:32 ON 12 JAN 2010

```
L11     42 S E1-E42
L12     28 S L11 AND NC4-C6-C6/ES AND 46.150.18/RID
L13     9 S L12 AND (C66H43N3 OR C78H51N3 OR C70H46N4 OR C66H44N2 OR C54H
L14     19 S L12 NOT L13
L15     10 S L14 NOT B/ELS
```

```

L16      STR
L17      SCR 1842
L18      50 S L16 AND L17
L19      94669 S L16 AND L17 FUL
L20      STR L16
L21      50 S L20 SAM SUB=L19
L22      88759 S L20 FUL SUB=L19
L23      STR
L24      50 S L23 SAM SUB=L22
L25      3106 S L23 FUL SUB=L22
          SAV TEMP L25 NGUYEN582A/A
L26      STR
L27      6 S L26 SAM SUB=L25
L28      147 S L26 FUL SUB=L25
          SAV TEMP L28 NGUYEN582B/A
L29      33 S L28 AND (CCS OR PMS OR MXS OR IDS)/CI
L30      3 S L28 AND NC>=2
L31      111 S L28 NOT L29,L30
L32      102 S L31 NOT L13
L33      18 S L32 AND (C54H36N2 OR C66H44N2 OR C71H46N4 OR C89H59N3 OR C83H
L34      15 S L33 NOT (1025080-49-2 OR 928050-05-9 OR 910647-29-9)
L35      15 S L11 AND L19 NOT L13,L34
L36      8 S L35 NOT B/ELS
L37      24 S L13,L34
          SAV TEMP L37 NGUYEN582C/A

```

FILE 'HCAPLUS' ENTERED AT 07:48:48 ON 12 JAN 2010

```

L38      22 S L37
L39      1 S L38 AND L1-L10
L40      0 S L38 AND PY<=2003 NOT P/DT
L41      0 S L38 AND PY<=2004 NOT P/DT
L42      0 S L38 AND PY<=2007 NOT P/DT
L43      2 S L38 AND (PY<=2003 OR PRY<=2003 OR AY<=2003)
L44      4 S L38 AND (PY<=2004 OR PRY<=2004 OR AY<=2004)
L45      17 S L38 AND (PY<=2007 OR PRY<=2007 OR AY<=2007)
L46      17 S L39,L43-L45
L47      5 S L38 NOT L46

```

=>